GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

OFFICE: TRIBUNE BUILDING, NEW YORK.

Conducted by . . . . . Professor C. S. SARGENT.

ENTERED AS SECOND-CLASS MATTER AT THE POST OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, JANUARY 10, 1894.

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Work for the Municipal Art Society.

THE proposition just made by the Municipal Art Society of this city to decorate, without expense to the city, a portion of the new Criminal Court Building is a definite step in the right direction. Appropriate sculptural and pictorial adornment for our public buildings and parks, when the works are designed and executed under the auspices of such a society and with its approbation, cannot but have an educating influence. The movement is a recognition, if nothing more, of the true position of art as related to civilized communities, and it is a declaration of the truth that the influence of beauty on our daily lives is a genuine need, and that the obligation to provide it for the people is just as imperative as it is to furnish schools or libraries, or pure water or fresh air or rapid transit. This first work of the Society, which will be the beginning, let us hope, of what is to be a long-continued usefulness, will draw attention to itself and the field it is to occupy, and hasten the time when it shall have the standing and command the respect which it deserves, and when its petitions and remonstrances will be heeded both by the people and by the city government.

The duty of this society to advise and criticise in the design of public parks and buildings is plainly higher and more important than to assist in the mere decoration of these works, and, no doubt, the time will come when a protest like that which it made a few weeks ago against the design of the speedway on Harlem River will not be treated with contempt by Park Commissioners. It will be remembered that a plan for this driveway was made by Mr. Vaux, the landscape-architect of the Board, which provided for just such a road as was needed, and included designs for preserving and enhancing the natural beauties of the water-front. For some reason, however, which has never been explained, the Park Department ignored the plan prepared by Mr. Vaux, and ordered the road to be constructed without any walk on the river-border. This exclusion of the people on foot from the bank of the river was aggravated by the fact that the road absorbed land which was already park territory, and which was valuable because it came to the water-front. No reason with any shadow of force in it was ever assigned for this outrageous legislation in favor of a small class, and no excuse was made for ignoring the design of the consulting landscape-adviser of the department. Since all this is public ground, and since by proper treatment it could be made a most beautiful addition to the city's parks, the Municipal Art Society made a formal protest against the plan itself and against the violation of sound principle and of precedent by the Department in attempting to construct a public work of this sort without consulting its landscape-architect. This protest, however, was brushed aside as if it was of no consequence, and the Park Board has gone on to call for bids to construct the road as they had determined.

The most discouraging feature of this case is that the majority of the Park Board have not the slightest idea that they are outraging public decency by ignoring the claims of art and doing despite to special training and skill. At a meeting, when the report of the landscape-architect was called for, one of these Commissioners asked, impatiently, "What has he to do with it?" Because a worthy and prosperous dry-goods merchant can bid a cash-boy run on an errand, it by no means logically follows that he can order a statue carved or a picture painted or a park designed in the same way. This inability to appreciate the value of taste and training is the very essence of vulgarity, and men of coarse fibre can never be made to understand by argument what every one with any refinement of mind knows by intuition. It is not likely that the Harlem speedway will be built with one sidewalk, but the plan will be changed, not because the Commissioners appreciate the grossness of their offense against the principles upon which all enlightened society rests, but because they cannot face the storm of indignation which will burst over them when the best public opinion of the city is once thoroughly aroused.

The proposal to erect a new Municipal Building in City Hall Park offers another opportunity for the Municipal Art Society to step in to protect the people from the vandalism of the city government. In deference to public opinion, a committee of architects have been empowered to examine a hundred or more proposed plans, and they reported that not one of them all was worthy to be considered. His Honor the Mayor then inquired if the Commission could not shuffle up the different sections of half a dozen of the best plans and patch them together so as to make an appropriate building, and, oddly enough, Mr. Le Brun, chairman of the commission, thought that this could very easily be done. Of course, it is absurd to suppose that any monumental building was ever put together in this way. Does any one imagine that St. Paul's Cathedral or the Capitol in Washington could have been designed after this fashion? Suppose Mr. Atwood, instead of developing the beautiful Art Building in Jackson Park, and directing its growth from one central and commanding thought, had dovetailed together pieces of the other buildings, and then put a roof over them, does any one imagine that the result would have been satisfactory? Of course, a municipal building constructed on the principle advocated by Mayor Gilroy would be a disgrace to an enlightened people; and yet in order to perpetrate this outrage it is proposed to tear down the one public building in the city of which every one is proud, and which is hallowed by the memories of a century. Besides this, the new monstrosity would cover up the only strip of grass on Broadway between Bowling Green and Union Square—that is, on two and a half miles of the most frequented part of the principal street of the principal city of the New World; and that, too, when the lofty buildings which are piling up about City Hall Park will make its immediate neighborhood the most densely populated spot in the world. No tenement district can compare with it in population during the day-time, and yet the city is tearing down blocks in other parts of the city in order to provide small parks for the people. In no spot on Manhattan Island, certainly, is there more need of open

space and a glimpse of verdure than there is about the City Hall. Surely the Municipal Art Society, the Historical Society and every other organization of people who make any pretense to cultivation or refinement, and every man or woman who has the slightest regard for the history, the honor, the health or the beauty of the city ought to protest against this backward step toward barbarism.

Josiah Gregg.

IT is remarkable that so little is now known or remembered of this man, who in his time made important contributions to the knowledge of the natural history of an interesting region, and who wrote a work of enduring interest, describing, as it does, one phase of American commercial activity, all knowledge of which without his narrative would have passed out of the knowledge of man with the picturesque race of hardy pioneers that it brought into existence.

The name of Josiah Gregg does not appear in the dictionaries of authors or of biography. The date and place of his birth are not known to this generation, and all that can be gathered of his early life is found in the preface of his book, in which he tells his readers that he was "cradled and educated upon the Indian borders" and that he had been "familiar with the Indian character from infancy." Ill health, he tells us, too, first induced him to cross the prairies, and to this journey, which was followed by several others, and to a long residence in northern Mexico, we owe *The Commerce of the Prairies*, a book in which can be found the only good account of the prairies and plains of the continent, and their commerce and population; and, although it is, perhaps, as a collector and discoverer of plants that Josiah Gregg is most interesting to the majority of our readers, so much of the true spirit of his life is told in the following letter which Mr. John Bigelow, of this city, has written at our request, that it cannot properly be withheld from publication:

It gives me pleasure to comply with your request for such information as I can furnish about Mr. Josiah Gregg and my humble part in the preparation for the press of his *Commerce of the Prairies*.

I owed the acquaintance of Mr. Gregg to the late William Cullen Bryant, to whom, in 1843, Mr. Gregg applied for a reference to some competent person to revise some notes of his and put them in shape for publication. Mr. Bryant advised him to call upon me. I found Mr. Gregg to be at that time a man about forty years of age and about five feet ten inches in height, though from the meagreness of his figure looking somewhat taller; he had a fine head and an intellectual cast of countenance and temperament, though his mouth and the lower part of his face showed that he had enjoyed to but a limited extent the refining influence of civilization. He had fine blue eyes and an honest, although not a cheerful, expression, due, as I afterward learned, to chronic dyspepsia. He was withal very shy and as modest as a schoolgirl.

We were soon at work together. He had previously confided his notes to Count Louis Fitzgerald Tasistro, subsequently and for many years a translator in the State Department at Washington, but their views of the way in which the work they were engaged upon should be executed were so widely divergent that their partnership was speedily dissolved. As I became more acquainted with Mr. Gregg I had no difficulty in discerning the cause of their incompatibility. He had no notions of literary art and he knew it, but he was morbidly conscientious, and nothing would induce him to state anything that he did not positively know as if he did know it, or to overstate anything. Tasistro had no such infirmity. Then Gregg had about as little imagination as any man I ever knew, while Tasistro had such an excess of it that he had no difficulty in believing and affirming things that never happened. It was not strange, therefore, that they soon parted with opinions of each other not in the least improved by their association.

I soon found that all I had to do was to put his notes into as plain and correct English as I knew how, without in the least modifying the proportions of his affirmations. He would not allow his version of a fact to be expanded or contracted a hair's-breadth, no matter what might be the artistic temptation, nor however unimportant the incident; he always had the critics of the plains before his eyes, and would sooner have broken up the plates and reprinted the whole book than have permitted the most trifling error to creep into his description of the loading of his mules or the marshaling of one of his caravans.

Although Mr. Gregg's early education had been limited and his reading not extensive, he had a vague notion, not unnatural to a frontier man of reflection, that there is no fame so enduring as authorship, nor any way in which a man may multiply himself so many times by the forces of other men as by writing a book. His whole soul, therefore, was completely absorbed in the work upon which we were engaged, as if it involved the destiny of empires. He had no family; he had a competence for all his moderate wants, and he dreamed of a fame from this work which should place him among the authors of his generation and compel his acquaintances to look up to him as he himself was accustomed to look up to those whose writings had delighted or instructed him.

Mr. Gregg had his lodgings at the Franklin Hotel, then standing on the corner of Broadway and Liberty or Cortlandt Street, and in his room there he spent pretty much his whole time, when not eating or sleeping, upon his manuscript and proofs. He rarely went out, except to the store of his publishers under the Astor House; he never went to the theatre, or, indeed, to any place of amusement. He took no recreation of any kind so far as I could learn. He did not appear to visit anywhere, nor did he appear to have any acquaintances. His heart was wholly in his book; it was his joy by day and his dream by night. His stay and life in the city during its incubation was his great trial. He pined for the prairies and the free open air of the wilderness. New York to him was a prison, and his hotel a cage. Whatever value his book possesses—and as a history of the trans-Mississippi commerce before the invasion of the railway, it has, I think, great and enduring value—was due to him and to him only. My laundry work added no more value to it than the washing and ironing adds to the value of a new garment.

Nowhere in all our literature can be found so full and entirely reliable an account of our early transcontinental commerce, and of every kind of life that flourished over the territory which it traversed, as in *The Commerce of the Prairies*; and the time is not distant when very little can be learned of the condition upon which that commerce was conducted, except from his book. It was favorably received by the public, and in due time reached a second edition. His publishers were unfortunate, and I doubt if Mr. Gregg ever derived any pecuniary advantage from his literary venture; that was a secondary matter with him, though there were some circumstances connected with his failure to receive the pecuniary returns to which he was entitled that did not enhance his respect for the publishing trade, and may have strengthened his preference for the frontier life and the unsophisticated dwellers of the wilderness.

Mr. Gregg's interest in botany can, perhaps, be traced to his intimacy with Dr. Engelmann, who lived in St. Louis when it was the starting-place for all expeditions across the plains, and who speaks of him as "an indefatigable discoverer and my friend." His principal botanical collections were made between Chihuahua and the mouth of the Rio Grande, particularly in the neighborhood of Monterey and Saltillo in Nueva Leon, a region which only one botanist explored before him—Jean Louis Berlandier, a Belgian, and a pupil of the elder Candolle, who first reached Mexico in 1828, and resided until his death in the city of Matamoras, where he established himself as an apothecary.

Mr. Gregg discovered many undescribed plants, and his name is connected with several interesting species of the Rio Grande valley, among them Acacia Greggii, Cereus Greggii, Fraxinus Greggii, Sargentia Greggii, Linum Greggii and Porophyllum Greggii. Twice the generic name of Greggia has been proposed in his honor, but as an older Greggia, now reduced to Eugenia, already existed, the name of Josiah Gregg, under the present ruling of American botanists, cannot be commemorated in a genus of plants.

Of the death of Mr. Gregg as little is known as of his life, and the only printed notice of it we have been able to find is contained in the first part of Asa Gray's *Plantæ Wrightianæ*, written in 1850, in which allusion is made in the preface and on page 9 to Mr. Gregg's death in California from "overexertion in scientific investigation in the interior."

Native Plants for Florida Gardens.

THE hummock woods and swamps of Florida are rich in ornamental trees and shrubs, and the sandy Pine-lands and flat-woods are rich in perennial and herbaceous plants. The beauty of the evergreen leaves and large flowers of the Magnolias, the delicious perfume of the Carolina Jessamine, the penetrating odor of the Spider Lily, all growing in the rich black soil on the edges of the lakes; the singular beauty of Holly, Icacorca paniculata, Myrsine Floridana and Cherry Laurel, the stateliness of the Loblolly Bay, the grandeur of the Live Oaks, the tropical picturesqueness of the Palmettos, always bring delight to any visitor here who loves nature. All of these and many other plants grow easily on dry Pine-land in Florida if transplanted from the hummock woods; but, as a rule, we see nothing but Orange-trees and white sand around the houses of the settlers. Nobody seems to think that there is abundant material for ornamental planting so close at hand. Now and then we see an Oleander, a Gardenia or a Hibiscus, or a few clumps of Crinums, which are invariably called Lilies, but very few native trees, shrubs or herbaceous plants. Settlers from the north often attempt to grow their old garden favorites, but the Snowballs and Lilacs, Bush Honeysuckles and Spiræas, the Hollyhock and Pæonies generally fail, although the ordinary Philadelphus usually grows well.

Such native trees as the Magnolia, Gordonia, Live Oak and Red Bay, Holly and many others which love rich moist soil will grow well on the sterile Pine-land when care is taken to plant them properly and fertilize and water them afterward for a time when necessary. The instructions which I can give on this point I received originally from Mr. Walter N. Pike, who has derived them from actual experience, and since then I have proved their value by personal trial. The earlier the plants are obtained in winter the better, and some commercial fertilizer will always be beneficial in helping them to start. Even a few shovelfuls of hummock-soil, mixed with the ordinary sand and placed about the roots, will be found very useful, since a great deal depends on their first growth. Heavy mulching should never be neglected in Florida about newly transplanted plants, not only for immediate effect, but for carrying them through the drought, since the mulch not only arrests the escape of moisture, but keeps the soil cool. Of course, newly set trees and shrubs should be watered well and the soil should be trodden firmly about the roots. It is always best to have a rim of soil raised about the trees with a hoe, so that they set in a saucer-like depression from four to six feet in diameter, and this circle should be at once covered with mulch, and the mulch should be weighted down. The roots are then in damp, cool soil, beyond the baking power of the sun's rays when the dry season comes. If the tree then droops, two or three pails of water must be poured into this depression, and each pailful should be allowed to soak away before another is added. Some exotics, like Michelia fuscata and Thea Bohea, are benefited if a little clay is mixed with the soil about the roots, and perhaps the same would be true of many native plants, but Magnolia fœtida grows like a weed when transplanted to high Pine-land, and so does the Holly, Ilex opaca, when lifted from the hummock to a hungry soil of sand.

It is small trouble to collect these trees, and with a single companion I once collected in one day in the latter part of October most of the trees and shrubs which I shall now name as desirable ones. Andromeda nitida is a singularly elegant shrub, found in peaty soil near the water. It grows five or six feet high, has thick, shining fragrant leaves, and in April is covered with pendulous clusters of white and fragrant blossoms hanging from the axils of the leaves. The nearly allied Leucothoë racemosa is found in similar locations and grows to a height of ten feet. Its dense racemes of twenty to thirty white bell-like flowers appear early on the naked branches. These plants were removed with balls of soil about the roots and transplanted to the edge of a small lake. Native Ferns were planted among them and other species of Andromeda. I had not yet learned the necessity of mulching, and every one died, although I have since had success with these and other plants of the Heath family. Trees of Magnolia fœtida, owing to their lack of fibrous roots, are difficult to transplant, but I obtained a few of these and they are now all growing well. All the Magnolias are easily raised from seeds and make a rapid growth on high, poor Pine-land if a little fertilizer is worked about them. Four years from the seed they will be specimens ten feet high, making a solid mass of lustrous foliage to the ground, and I have seen trees of that size which flowered freely. The Loblolly Bay needs the same treatment. Myrsine Floridana is a small broad-leaved evergreen tree, which, like the Holly, Loblolly Bay and Magnolias, never shows its full beauty in the woods where it lives in a constant struggle with coarser trees. When planted alone, however, it makes a conspicuously beautiful object, having a perfect form and very dense foliage. Magnolia glauca, which is almost as desirable as the Big Bay, will thrive under the same treatment. The Silver Bush, Leucophyllum Texanum (see GARDEN AND FOREST, vol. iii., p. 488), is one of the most conspicuous objects on my grounds. I have seen this shrub growing abundantly in western Texas on dry and barren soil as a spreading shrub five to ten feet high and flowering at intervals from May to October after every heavy shower. These thimble-shaped, rosy flowers, when seen among the woolly leaves of an ashy-gray color, are exceptionally beautiful. It transplants readily and can be cut to any desired form.

Many other native trees should find a place in every Florida garden. The sweet-leaved Symplocos tinctoria is one of the prettiest small evergreen trees of the south. Ilex Dahoon is a beautiful evergreen shrub. The Wax Myrtle, Myrica cerifera, here is another evergreen which is very pretty and interesting. The American Olive, Osmanthus Americanus, a beautiful southern forest-tree, which attains a fine form, and is densely covered with foliage when planted in the garden. The Sea Grapes, the common name for two species of Coccoloba, are also desirable broad-leaved evergreens, while the Virginia Fringe-tree, the Flowering Dogwood, Itea Virginica, Calicanthus floridus, the Palmetto and many more could be used to make a garden of native plants in Florida a most interesting and delightful spot.

Milwaukee, Wis. *H. Nehrling.*

Plant Notes.

The Cocoanut-tree.

ON page 15 of this issue a photograph of a garden in Key West, shaded by a grove of Cocoanut-trees, is reproduced. This Palm does not grow spontaneously on Key West or on any of the other Florida islands, as the violent north winds which often prevail in winter reduce the temperature of southern Florida too low for this heat-loving tree, although when planted and cared for while young it grows to a moderate size on the keys, and sometimes bears fruit; otherwise the nuts which are cast upon those shores by the Gulf Stream would have produced plants that would gradually have covered them, for it is in this way that the Cocoanut has been able gradually to spread over all the sandy coral shores of the tropics of the two worlds. The place of its first home is uncertain. It was believed by the younger Candolle to have first appeared on some of the islands of the Indian Archipelago, whence it was carried either by ocean currents or by man to the southern coast of Asia, east tropical Africa, and to the islands and shores of Pacific tropical America. Undoubtedly it was brought by man to the West Indies and Brazil after the discovery of America by Europeans, although it has now so spread, through the action of ocean currents or by the agency of

man, that it has every appearance of being indigenous on the shores of east tropical America.

The Cocoanut Palm is a magnificent plant, well named "a prince of the vegetable kingdom," with tall slender columnar stem eighty or a hundred feet high, and rich pale yellow-green leaves which are thirty or forty feet long and flutter and rustle with every breath of wind.

The Cocoanut grows only near the shore, where its roots penetrating the sandy soil may drink freely from clear underground springs. Of all trees it is the most useful to man, furnishing food, shelter and employment to hundreds of thousands of the human race. In tropical countries, especially in southern India and in Malaya, the Cocoanut supplies to whole communities the chief necessities of life. Every part is useful; the roots are considered a remedy against fevers; from the trunk houses, boats and furniture are made; the leaves furnish the thatch for houses and the material from which baskets, hats, mats and innumerable other articles are made; the network of fibres at their base is used for sieves and is woven into cloth; from the young flower-stalks a Palm-wine, called toddy, is obtained, from which arrak, a fiery alcoholic drink, is distilled. The value of the fruit is well known. From the husk, which is called coir, commercially, cordage, bedding, mats, brushes and other articles are manufactured. In the tropics, lamps, drinking-vessels and spoons are made from the hard shells. The albumen of the seed contains large quantities of oil, used in the east for cooking and in illuminating; in Europe and the United States it is often made into soap and candles, yielding, after the oil is extracted, a refuse valuable as food for cattle, or as a fertilizer. In some parts of the tropics the kernel of the seed forms the chief food of the inhabitants. The cool, milky fluid which fills the cavity of the fruit when the nut is young, affords an agreeable beverage, and the albumen of the young nut, which is soft and jelly-like, is nutritious and of a delicate flavor.

As might be expected in the case of a plant of such value, it is often carefully and extensively cultivated in many countries, and numerous varieties, differing in the size, shape and quality of the fruit, are now known. The Cocoanut is propagated by seeds; the nuts are sown in nursery-beds, and at the end of six or eight months the seedlings are large enough to plant. The plants are usually set twenty-five feet apart each way in carefully prepared beds filled with rich surface-soil. Once established, a plantation of Cocoanuts requires little care beyond watering, which is necessary in its early years to ensure a rapid and vigorous growth. In good soil the trees usually begin to flower at the end of five or six years, and may be expected to be in full bearing in from eight to twelve years. Thirty nuts from a tree is considered a fair average yield, although individual trees have been known to produce an average of three hundred nuts during a period of ten years. An application of manure increases the yield of the trees, although, probably, the value of the additional crop obtained in this way is hardly large enough to justify much expenditure.

In recent years the Cocoanut has been cultivated on a very large scale in British Honduras, Jamaica and other parts of Central America, as well as on the northern coast of South America and the West Indies. The consumption of cocoanuts in the United States has become very large, as many as twenty millions being imported to this country every year. They are brought largely in steamers with other cargoes, although there are sailing vessels engaged in this trade exclusively, and last month two schooners discharged in this city, respectively, 170,000 and 260,000 nuts. Those which come from San Blas are considered the most desirable, since they shell more easily, while the meat is richer in oil and retains its flavor longer than others. Those from Baracoa are larger, but they lack oil and flavor, and cost less. After they are unloaded the nuts are sorted here and divided into three grades, according to size. The present price for select nuts from San Blas is $28.00 a thousand, from Jamaica $25.00, and from Baracoa $20.00, while the other grades are correspondingly lower; the lowest class, known to the trade as "eggs," brings only $10.00 a thousand. More than one-half of all the cocoanuts imported are bought by the confectioners, a single firm in New York using as many as forty thousand a month, and it is possible to fill this large standing order because importations are made all the year round. Of the remainder the larger portion goes to the desiccating establishments, while only a few are now sold in the stores in their natural condition.

The Mexican Ash.

OF the beautiful Mexican Ash, Fraxinus Berlandieriana, Mr. C. G. Pringle, who has lately returned to his home in Vermont from another successful Mexican journey, chiefly devoted to exploring the flora of the state of Jalisco, writes:

In October I visited Michoacan once more, and made a longer tour than ever before through the mountainous regions beyond Patzenaro. There, at last, I found the Mexican Ash in its native habitat. It was nowhere abundant, but widely scattered over the hills and in various situations, quite in the way of Fraxinus Americana on the hills of Vermont. Similar conditions to these in which I found the Ash extend eastward from Michoacan through the states of Mexico and Puebla and Hidalgo on the left-hand, and Guerrero and Oaxaca on the right; and, without doubt, the range of this species extends through the highlands of all these states. As might be expected, its size when growing in natural conditions was not very large.

In the cities of the Mexican table-lands, excepting in Chihuahua, no species is so much planted in parks, plazas and avenues as this Ash. Along streams beyond the city limits it is to be found, probably disseminated from the town-planted trees. It is worthy of being so generally used in plantations, for it attains noble dimensions and presents a broad head of dense dark green foliage. The color of the bark is darker than that of Fraxinus Americana; it is hard, only an inch or an inch and a half thick even on the oldest trees, and its furrows are shallow, interrupted and about an inch apart. The largest specimen I have seen overshadows half the plaza in the city of Guadalajara; it is about fifty feet tall, and the trunk, five feet above the surface of the soil, has a circumference of 17½ feet. The trunks of two specimens which form part of a long avenue of venerable trees in the same city measure respectively 13⅔ feet and 11½ feet in circumference.

It is this Ash which visitors through the valley in which stands the city of Mexico always admire, and which they speak of as one of the most beautiful of shade-trees.

Foreign Correspondence.

London Letter.

Vitis Coignetiæ.—Considerable interest in this plant has been aroused in England since it became known that it is the same as a vine which has been in the collection of Mr. Anthony Waterer, at Knap Hill, many years, and which, while it has delighted every one who has seen it in its brilliant autumn colors, has persistently refused to be propagated. The Knap Hill plant is an enormous specimen, and clambers over a building and an old tree-trunk, and the brilliant red of its thousands of large leathery leaves in September or October is worth going a long way to see. A well-known English amateur who had lately seen the plant at Knap Hill came to Kew to inquire about it, for, to use his own language, he "could not sleep since he saw the plant and was informed that he could not obtain a specimen of it." The information recently published in Garden and Forest concerning V. Coignetiæ has this week been copied into the *Gardeners' Chronicle*. The plant is certain to become a favorite here.

Pueraria Thunbergiana.—The magnificent specimen of this plant represented in the picture in Garden and Forest, vol. vi., p. 505, is likely to call the attention of horticulturists to its value as a hardy climber. I have known the plant about ten years, but never saw it except at Kew,

where it used to be grown against a south wall outside. Here it grew as fast as a Kidney Bean in summer, and died down to the ground every winter. It was lost in an attempt to establish it against a tree-trunk. At that time we called it Dolichos Japonicus. About five years ago we obtained seeds of it from Japan under its correct name, and there is now a strong plant of it in the large temperate house or winter garden, where it sends up annually stems which grow thirty feet or so in a season, and bear very large rich green trifoliate leaves. Here, however, the stems are annual, although frost never reaches the plant. It has never flowered at Kew. A specimen of it in flower was sent to Kew for determination in October, last year, gathered from a plant grown in a stove in Scotland.

soon fall if cut and placed in water. There are eight or nine petals in each flower, which consequently have a semi-double appearance.

COSTUS IGNEUS.—I ought to have included this with the plants mentioned in my last letter, as specially interesting among those shown and certificated at the last meeting of the Royal Horticultural Society. Although introduced at least ten years ago by Mr. Linden, and figured in the *Botanical Magazine* eight years ago from plants flowered at Kew, it was generally looked upon as a new plant by those who saw the group of beautifully grown specimens of it shown a few days ago by Sir Trevor Lawrence. It is a native of Brazil, where it appears to be common. Under cultivation it forms a compact tuft of herbaceous

Fig. 2.—The Cocoanut-tree on Key West, Florida.—See page 13.

JASMINUM GRACILLIMUM. — This is an excellent winter-flowering shrub for the warm house. At Kew it is trained on the south side of a glass partition in the Begonia-house, where it has been for several weeks, and is still, crowned with large branches of white star-like sweet-scented flowers. It was discovered in Borneo by Mr. Burbidge, when collecting for Messrs. Veitch & Sons, who first flowered it in 1881, when it was described by Sir Joseph Hooker as the most distinct of all the many Asiatic species of Jasminum, and more floriferous and attractive than any yet known. When it was first shown by Messrs. Veitch, it was in the form of a shrub, 3 feet high, crowned with elegant branches, all weighed down by large clusters of bloom. On the plant the flowers last well, but they

stems about a foot high, clothed with rich green lanceolate leaves and terminated by a head like cluster of green sheaths, from which flowers are developed in succession and profusely all the summer and autumn. The flowers are three inches across, flat, elegantly waved and crisped along the margin, and colored rich glistening orange yellow.

LACHENALIA AUREA, VAR. GIGANTEA.—This is a plant which, for garden purposes at any rate, deserves a distinctive name, as it is far superior to the type as generally cultivated, which rarely has a dozen flowers on a spike, whereas the variety gigantea has from twenty to thirty flowers, which, moreover, are half as large again as the common form of L. aurea. There is a group of plants of the variety

in flower in the Cape-house at Kew, some of the spikes being fully fifteen inches high, and clothed two-thirds of their length with large fleshy flowers of the richest old-gold color. I should place this first among cultivated Lachenalias; it is superior to the hybrid L. Nelsoni in the purity of its color. There is also a group of the handsome L. pendula in flower in the same house, the drooping tubes of which are red, tipped with green and purple. These are invaluable plants at this time of year.

London. *W. Watson.*

Cultural Department.

The Russian Cherries.

IT is rather remarkable that more is generally known about the large than the small Russian tree-fruits. At least, it is only of late that we are getting hold of full and satisfactory information about both the Plums and Cherries brought to this country from Russia some ten years ago. I received a few small plants of these not long afterward, and planted them about where I could find vacancies in my Apple orchard, and these proved themselves hardy, but not productive. This has been true of all Plums and Cherries so planted, and as in Russia they are both very productive, and as growers in the west do not complain in this respect, I came to the conclusion that the Plums and the Cherries should each have a place by themselves. Four years ago I received from Professor Budd a liberal supply of yearling trees of both species, and following his advice they were planted rather closely, twelve feet one way by twenty the other, and last summer they began to produce fruit quite freely. Little Cherry-trees, less than four feet high, gave me one to two quarts each. The trees, however, are not all dwarf; but, so far, I find it is the dwarf forms that bear the largest and best cherries.

These Russian Cherries and Plums, it should be well understood, were selected by Professor Budd, of Iowa, and Mr. Charles Gibb, of Canada, during their pomological expedition to Russia in 1882, and imported the following spring. Some of these varieties have since been imported by other persons, and the list of these Russian fruits in this country is now a long one. Much of the wood of the early importations was used for propagation, and the effect of this was so unfavorable to the necessary development of fruit-bearing on any sufficient scale to give ground for exact knowledge of qualities, actual or comparative, that we are still surprisingly ignorant of facts as regards special varieties. The first report of any considerable fullness on the subject is that of Mr. John Craig, a horticultural pupil of Mr. Charles Gibb, and subsequently of Professor Budd, who is now in charge of the horticultural department of the Dominion Agricultural Bureau, at Ottawa. Mr. Craig's report was issued in November, 1892; and although this was ten years after the selections were made in Russia, it is based upon results in an orchard just beginning to produce fruit in any considerable quantity. Of course, this is not said with any idea of criticism upon the delay. The most important duty was plainly to propagate the varieties as rapidly as possible, disseminate the young trees as widely as possible, and then to collect and compare the reports of results. The next three or four years will add enormously to our practical knowledge in this line. The early plantings of single trees, here and there, like my own, already referred to, have, indeed, given us older and larger trees; but their unfruitfulness has left us still uncertain as to what might be the results under proper conditions.

The varieties here reported upon were, in the main, personal selections made from an extensive list by Professor Budd, although a few were from the stock of Ellwanger & Barry and others who are propagating these fruits commercially. It is proper for me to say that I am not doing this myself. At Ottawa the first fruits were picked in 1890 from trees set in 1887. The soil is a sandy loam, fertilized with barn-yard manure and leached ashes, and the growth of the trees has been healthy and vigorous. In 1892 forty varieties fruited, many yielding full crops. They were all Dukes or Morellos, or hybrid forms between these. As is known, the Dukes are strong upright growers, while the typical Morellos have round tops, with smaller leaves and slender drooping branches, but intermediate forms are numerous. Mr. Craig gives us a number of photo-engravings of varieties of natural size, very well done. The first illustration is of Early Morello, Amarelle Hâtive, bearing a full crop the fourth year from planting. Ripe at Ottawa July 10th. Fruit large; skin dark red; stalk long, in a deep cavity; pit medium to large; flesh well tinged with red; quality good.

Bessarabian, said to be of an Asiatic race. As a rule, names, however, are not reliable indications of origin. Fruit medium to large; in pairs, bright red; flattened sidewise and at apex; stalk long, in a deep cavity; flesh firm, dark red, sub-acid, without astringency when ripe; pit small and round; ripens at Ottawa the first week of August; tree a free grower; strictly hardy.

Brown Brusselles, a favorite and successful variety at Moscow. Fruit large, heart-shaped, almost black; flesh firm, high-colored, acid; a favorite variety in the Warsaw market; tree a free, open grower; closely resembles the Shadow Amarelle, mentioned below; ripe August 10th.

Double Glass, very distinct, upright tree, with large prominent buds; fruit of largest size, heart-shaped, with deep suture; stalk thick, not long; flesh yellow, juice uncolored; ripe end of July; not strictly iron-clad at Ottawa.

Frauendorfer Weichsel, very hardy and productive; small to medium, fair quality; ripe end of July.

Griotte du Nord, from Silesia; fruit medium to large, dark red, spherical; long slender stalks in pairs; flesh highly colored, juicy, acid, but pleasant; pit medium; a slow grower.

Griotte Imperial, hardy and productive; a slow grower; fruit medium to large; skin dark red; juice deeply colored, quite acid, rich; ripe by the middle of July.

Orel No. 25, one of several varieties obtained from Orel, Russia, by numbers. This, which appears the most valuable, is large, heart-shaped; light red, with uncolored juice; flesh tender, very juicy, sub-acid; ripe first week in August; tree vigorous, upright, hardy. A valuable late Cherry.

Vladimir. This Cherry attracted Mr. Gibbs' attention more than any other which he saw in Russia. Its cultivation has attained vast proportions in the province from which it gets its name. The tree is exceptionally hardy, and it is proving very productive on light soils in Ontario. Fruit medium to small, borne in clusters of two to four; skin nearly black; flesh firm, with a sprightly acidity. Seedlings of Vladimir in Ottawa show a more perfect adaptation to the climate than the original stock.

Shadow Amarelle, so called from its mirror-like surface reflecting exterior objects. This is a vigorous and productive late sort, ripe early in August. A considerable number of this class is quite dwarf, with compact round heads; bears while young, and with wonderful profusion. These Russian Cherries bid fair to make cherry-growing for market a profitable business in the cold north.

Newport, Vt. *T. H. Hoskins.*

Carnations.

MRS. FISHER still continues the best white Carnation here for any purpose. It possesses a strong constitution, and is an abudant bloomer, being equally profuse in summer as winter. The flowers are of the largest size, excellent form, well fringed and very fragrant. In the depth of winter, and especially during cool weather, Mrs. Fisher comes slightly tinged with pink. This, at Wellesley, Massachusetts, at first was considered a detriment, but Mr. Tailby tells me he sells all he can get of this flush-tinted variety, and a mass of them which I lately saw made a charming appearance. The plant is easily propagated, and so far has proved rust-proof. Ferdinand Mangold is an equally good crimson. It is an ideal flower, which all raisers of new varieties strive to attain. If it has a fault, it is that it is difficult to propagate. There is not quite such unanimity of opinion about the scarlet varieties. Hector takes the lead here. Its strong constitution, fine bright color and good stiff stems are its most important qualifications. It is not, however, as prolific as Portia, and though the flowers are larger, they are somewhat inclined to burst. Lilian Abbe is a new and very promising scarlet. It is somewhat similar to Florence, once the stand-by, but has a much better stem. So far as I have seen, it is perfectly healthy. Nobscot is another new variety, which has been grown by the raiser, Mr. Nicholson, of Framingham, Massachusetts, for summer use. It is a free and continuous bloomer; the flowers are of perfect form and fine color, but lack size. The best bright pink so far is William Scott. It is nearer to Grace Wilder than any variety yet raised. It has all the merits and none of the faults of Grace Wilder, which seems to have developed an impaired constitution during late years, a weakness seen in a loss of color and a tendency to rust. Ada Byron, the new bright pink, is really a pink Mrs. Fisher, and is a seedling of that variety raised by Mr. Fisher, of Framingham, Massachusetts. It is identical with the parent-plant in every way except in color, and to those who know the parent, nothing more need be said in the way of commendation. The new William Nicholson is a fine reddish pink, and is probably the largest and most prolific variety with this shade of flowers, which have hitherto been shy

bloomers. Mr. Nicholson has put these varieties to a thorough test to determine their tendency to disease, having planted them among a batch of Golden Triumph, which are rusted beyond redemption.

The various forms of Carnation disease, and that principally known as rust, are attracting considerable attention; in fact, it is becoming a serious matter to growers everywhere. No sure cure has been discovered, although various remedies have been applied by different growers; and while some may have been successful, it is far more probable that cleanliness, a little fire-heat, and, consequently, a drier atmosphere, has done more than anything to check it. For my own part, I can say I have tried almost everything recommended except "Fostite" and common salt. Those who have the good fortune to be moderately free from it, think they succeeded with a pinch of salt in solution, sprinkled on with a watering-pot, and another is equally sure he manages it with tobacco-dust and sulphur, while a third declares that panacea for all the ills of plant-life, Fir-tree oil, has solved the problem for him. But I am acquainted with others who happened to have their plants badly affected who failed with all these, and in nearly every case the plants are growing out of it after all attempts to eradicate the disease with fungicides had been abandoned. The majority of growers and raisers agree that salvation lies in selecting sorts which are free from disease. So far, several varieties have shown no tendency to rust even when planted near to affected plants. Ferdinand Mangold is a noteworthy instance of this. Many others could be named. Some growers date the appearance of the disease in their establishments to buying infected plants, and while this, no doubt, has been the means of spreading it, it has been generally noted hereabout that the disease appeared first in the open ground; and on examining many weeds, and particularly grasses in pastures, abundance of rust could be found; in some cases quite near to the Carnation-patch. It will thus be seen that the matter is a serious one, since fungal diseases may be carried by winds for a considerable distance and quickly spread over the whole country.

Wellesley, Mass. *T. D. Hatfield.*

Some Saxifrages.

THE Saxifrages are interesting, hardy plants, mostly alpine, which are usually very amenable to garden-culture, either on the rockery or in a suitable position in the borders. They form a very numerous family, as there are now reckoned some 184 species in sixteen sections, with many varieties. Botanists and cultivators have confused the names somewhat, so that considerable care is requisite in forming a collection which shall be truly named. The smaller Saxifrages are particularly desirable for the rockery and for borders, where small and interesting plants are appreciated; with suitable planting they are easily established and reliable, and are attractive at all seasons. To name a few, S. Burseriana and variety known as Major are fine winter-flowering plants. They form small masses of small-spiked rosettes, dark green and slightly silvery. The flowers are white and expand from crimson buds, and they appear on short stems and almost hide the plant. A choice variety of this sort is called Boydii, which does not seem as reliable as the type, at least my rosettes have gone backward. S. luteo-purpurea is a yellow-flowered species of the same section, flowering slightly later. S. sancta has also mossy rosettes, with deeper yellow flowers. The encrusted Saxifrages are delightful as well as curious plants; the glaucous encrusted leaves form striking, regularly formed rosettes, from the centre of which, when mature, rise stems furnished with numerous attractive flowers. S. minima carpets the ground with numerous minute rosettes about a quarter of an inch in diameter, and from this species to the gem of the section, S. longifolia, which is said sometimes to produce rosettes even a foot in diameter, there are varieties with rosettes of various sizes and forms. These usually have serrated and encrusted edges to the leaves, and are objects of special interest under the microscope. S. Aizoon is probably the best-known species of this character, and makes nice cushions of compact small rosettes. S. pectinata is a variety with very distinctly toothed small leaves, and encrusted; the rosettes are from a quarter of an inch to an inch in diameter. S. lanceolata has lanceolate leaves and rosettes of rather open form. S. Cotyledon is a large rosetted form, which seems rather easier to establish than either S. McNabiana or S. longifolia, which are considered the gems of the larger varieties. These are apt to damp off here in a flat border which holds the requisite amount of moisture, and they should preferably be planted in the rockery or on a wall in a vertical position where no moisture will lodge in the leafy rosettes. S. La Ga Dauphana is an interesting form, the globular rosettes of which are rose-tinted. It makes compact masses. The sliver-moss Saxifrage, S. cæsia, is a distinct form, with tiny balls or round rosettes of short, hard encrusted leaves, which are prettily colored a lavender-gray. S. aretioides is a larger form with a darker crust. This encrustation appears to be formed of lime in crystals. The Saxifrages with toothed or horn-like leaves, like S. Lindsayana and S. nervosa, are bright plants, which flower well, and the foliage is light green. Probably the hybrid, S. Wallaceii, is the best plant of this section; it produces a profusion of charming pure white flowers of good size, but has a rather bad habit of hardening up its stems and losing its lower leaves. My helper has several times tidied it out of the garden, so that I have not been able to test its wintering qualities.

These are only a few of the Saxifrages which are to be had readily, and are likely to please those interested in such things. As to their culture, they usually need good loam, with plenty of sharp stones or grit free from decaying vegetable-matter or manure. They require a position where their roots can always find a supply of moisture, and in such a place they will endure strong sunshine. It seems quite hopeless to try to carry them through one of our dry hot summers unless they are well established, and unless the plants when received are strong, it will be better to retain them in pots in a frame until cool nights come. Guided by a little experience, I grow any new kinds which come to me in pots in a cool house until the stock can be divided, and then I venture a piece at a time outside at a favorable season. This is a practice which requires considerable patience, as they do not increase with great rapidity. Some of my friends seem to consider the cultivation of such little gems impractical, and one candidly remarked only the other day that some of my notes were tinged with the same un-American trait. To my mind, the practical gardener is one who grows plants which interest him and give a profit of mental pleasure. This pleasure may be very much diversified, and does not always depend on the special plants or flowers, these being merely details often of the play. Very much of the pleasure of any garden will consist in the light in which it is viewed, and this light will depend on the one who views. A good imagination is indispensable to a gardener who wishes to secure the best result from his plants. To see only the bald features of a plant, without light or shade, is no more satisfying than the view of so much merchandise. There is as much excitement in collecting and growing plants as in hunting for "first editions" or in any other of the fads which entertain mankind, but it is a curious fact that so impressed is the average person with catalogue plants, florists' flowers and eatable things that it seems difficult to impress the average man with the fact that the cultivation of other things can pay, and that one's leisure hours may be practically passed at work which brings no coin.

Standing among a few hundred Chrysanthemum-plants, to which I mentally pointed with pride, one of my neighbors asking about the plant, frankly said, "Well, you could have a nice garden of corn and peas here." Another friend advises me to be practical and go in for grapes, which I can buy for nothing a pound; and for pears, not knowing that three Pear-trees in our garden furnish us with an annual loathing for this fruit. My idea of a practical garden, without further illustration, is one which is filled with plants which interest the owner, and these are more likely to be interesting the further one gets away from typical market flowers, though these, of course, are not to be neglected entirely.

Elizabeth, N. J. *J. N. Gerard.*

Work in the Greenhouse.

WITH the arrival of the new year comes a quantity of work that is best done at this period, and seed-sowing and propagation can now be carried on under exceptionally favorable conditions. Small seeds, such as those of Gloxinias, Begonias, Streptocarpus and many others which are slow to germinate, are best sown now. Small seeds, such as those named, should never be covered with soil, but sown on the surface after the soil has been made moderately firm and quite level, and after it has been thoroughly watered. A gentle heat under the pans or boxes will materially aid germination and assist the young plants in the earlier stages of their growth. It is often recommended that a sheet of glass be placed over the pans or boxes after the seed is sown, and this is beneficial when care is taken to guard against the fungus-growth peculiar to boxes of choice young seedlings; unless the condensed moisture is carefully wiped from the glass every day, the result of much care is sometimes swept away in a few hours.

If Cyclamen-seeds have not been sown earlier no time

should be lost before doing this work. Seeds sown now and grown on without a check all summer make neat plants to flower next winter, but sowing in September is preferable. Where old plants can be carried over safely through the summer, if they do well they are better than young ones, as a greater number of flowers are obtained to a plant. Seeds of herbaceous plants sown now will come up well, and, if transplanted before they become crowded in the seed-boxes, will make strong plants to set out in spring. Most of them will flower next summer, although some will not do so until the second year, no matter when they are sown, while seeds of Iris, Pæonies, Hellebores, Dictamnus and others take at least three years before flowering size is reached, and, indeed, if these are not sown as soon as gathered they often remain dormant a year before germinating, so they should always be sown as soon as ripe, when this is practicable.

We commence propagating Carnations about the tenth of January, this being a good time to root them, and the weaker growing sorts, such as Lizzie McGowan and Grace Wilder, are secured first. There is a tendency in the flowers of this latter kind to come streaky in color, and this may be avoided to a great extent by taking all cuttings from the plants that do not show this tendency. Daybreak is now recognized as a standard kind, but to secure well-shaped plants at lifting time, cuttings should be taken as late as possible, and as Daybreak roots more easily than any kind I know, it is possible to take cuttings as late as May and to have fine plants at lifting time. Carnation cuttings do not like sunshine or drought; plenty of water, shade and gentle bottom-heat will secure success.

Among greenhouse plants, Ericas, Boronias, Dipladenias, Luculia gratissima and Rubber-plants can now be propagated with more success than at any time; when Ficus cuttings are made we place the cut ends in dry sand to heal over for a few hours before putting them in the cutting-bench, and when the cut is thus healed very few fail to root. Bouvardias are best increased by root-cuttings at this time, and it is also preferable to raise new plants each year, as these give better flowers, though, perhaps, fewer in number. Peperomias make ideal plants for house-decoration, and a few leaves taken now and rooted in the same way that Begonia Rex is treated, will soon form useful material for use later on.

If seedlings of Ferns are coming up in various places in the greenhouses they should be carefully lifted and pricked off in pans, to be potted later; these make nice plants for jardinières during the summer or to grow on. Adiantums do not come so spontaneously as many others do, and to secure a quantity of these a sowing of spores at this time will give a good supply. Old plants, divided into small pieces and started in the propagating-bench, will also make good plants, but they are never as shapely as seedlings are. The colored-leaved Dracænas, when used for furnishing the house, soon lose their bottom leaves and become unsightly. If the tops are very highly colored, after making cuttings of them, they will root far better if placed in bottles of water than in sand, a little charcoal being added to keep the water sweet. The cuttings should be potted as soon as roots form, which will require about a month if the bottles are stood in a warm place. The stems may be cut in lengths of two inches, to be placed in a flat and covered with chopped sphagnum moss and sand. If the flat is placed on the hot-water pipes to get a good bottom-heat, every piece will grow, and these make the best plants, although they require a longer time than the tops. The tops are earlier in showing color.

South Lancaster, Mass. *E. O. Orpet.*

Correspondence.

Oil of Basswood.

To the Editor of Garden and Forest:

Sir,—I note with interest in the Consular Reports for December, 1893, an account from Mr. Johnson, United States Consul at Stuttgart, of the attempts made in Germany to produce a substitute for olive-oil, and a question is suggested to me by this report which you may be able to answer. Mr. Johnson says that the south Germans have made a table oil from the beech-nut which has "given great satisfaction," but the supply is too precarious on account of the scarcity of the nut in certain years. More recently a better and more certain substitute has been found in oil made from the seed of Linden-trees. According to the report of Dr. C. Müller to the German Botanical Society, this oil "has a number of excellent qualities, which would appear to make it certain that the Linden-seed will be considered one of the principal sources for obtaining table oil." The regularity with which the Linden produces seed precludes any fear of scarcity; and the percentage of oil in Linden-seed is given as fifty eight. It is maintained, Consul Johnson says, that "the oil has a peculiarly fine flavor, free from all bitter or aromatic taste, and that it has the appearance of olive-oil. It belongs also to the oils which do not evaporate. Oil made from Linden-seed will never become rancid. It has no tendency to oxygenate. It will stand a great degree of cold without freezing. Dr. Müller has exposed it to a temperature of three degrees, Fahrenheit, below zero without being able to notice any change."

Do you suppose that the seeds of our native Lindens (Basswood) would yield such a percentage of so excellent an oil? From an economic point of view, the question must be very well worth considering.

Boston, Mass. *J. E. C.*

[The seeds of all the Lindens undoubtedly contain oil in larger or smaller quantities, but what percentage can be obtained from the American species can only be ascertained, of course, by careful experiments. The subject is an interesting one, and well worth the attention of our agricultural chemists.—Ed.]

Timber Cutting on State Lands.

To the Editor of Garden and Forest:

Sir,—It may be of interest to your readers to learn something of the work done in Minnesota recently, looking into the returns of timber-cutting on lands belonging to the state and to state institutions. The investigations are being conducted by a joint committee of the Senate and the House of Representatives in a very efficient manner.

Many of the returns are found to cover but a fraction of the timber cut, and the state seems to have been defrauded extensively. One of the ways in which this has been done is as follows: A buys pine-stumpage at auction from the state; he agrees to pay a certain price and to put a certain mark on the logs, and these logs are to be sealed by the Surveyor-General of Logs and Lumber. The Surveyor-General's deputy comes to the landing when these logs are piled on the bank of the stream, and scales those that have the state mark on them, but does not make sure that these are all the logs that were taken from the section the state has sold. This gives the lumberman abundant opportunity to haul logs from the same section to some other landing and to put some other mark on them, which many of our enterprising and liberty-loving loggers are not slow to do. On one of the sections cut in this way it was found that over 7,000,000 feet had been cut from it, while the Surveyor-General's deputy, virtually accepting the lumberman's report of his own work, returned but 600,000 feet. Besides this, a very large amount of cutting is done without any form of permit, the timber thus stolen being principally from Sections 16 and 36, which in each township are set aside by the state as an endowment for her public schools. It is said that during the past two years the state has not received reports of one-half the amount of log-timber cut on its lands.

St. Paul, Minn. *X.*

Grafting Grapes.

To the Editor of Garden and Forest:

Sir,—I have an acre of unreclaimed swamp on my farm, around the borders of which are growing twenty or thirty strong wild Grape-vines, which clamber over trees and bushes and bear every year large crops of white and purple grapes, generally of large size, but with very thick skins and of coarse quality. Would it be profitable for me to graft these vines with grapes of better sorts, and if so, how shall I proceed?

Hamburgh, N. J. *Quis.*

[No doubt, it would be a good thing if the thrifty vines about this swamp were made, by grafting, to produce Niagara, Brighton or Worden grapes, instead of the wild fruit they now yield, but, unless one has considerable experience in this matter, he will be very fortunate if his failures do not outnumber his successes. In some parts of the country this practice is quite general, and entire vineyards, planted with unprofitable varieties, have been grafted with desirable ones. At the same time, many other persons who have carefully copied the processes as described have signally failed. We are not aware that the French method of using both stock and cion in a somewhat herbaceous condition has been tried to any great extent in this country.

This kind of grafting is done in warm weather, when the vine is making its most active growth, the cions, which contain two buds, being used when they are still flexible, although the centre should be free from pith. The method known as splice-grafting is used, and the cions are set below the fourth bud from the extremity of the shoot.

In this country the most approved practice is to cut the vine low and graft below the surface of the ground. In large vines, like those mentioned by our correspondent, cleft-grafting is generally impossible, because the grain of the stock is so twisted that it will not split true. Side-grafting in various ways is recommended. One of the best is to make an oblique groove on the side of the stump with a fine saw and chisel. The groove should be about a quarter of an inch across, according to the size of the cion, and about as deep as its diameter; a special saw, making a draw-cut about an eighth of an inch wide, instead of a push-cut, is sometimes used for this operation. The cion, which must have two buds, is then shaved off on opposite sides, half-way between the buds, so that it will fit into the groove. When it is placed there one of the buds should be below the level of the ground and the other one above; all the exposed surfaces are then carefully waxed and the stump with the lower bud is covered up with earth, while one bud remains above ground to make growth. Of course, the cion should be dormant, although the stock may be making active growth. If cions are not already taken they may be cut any day during the winter when they are not frozen, and kept in sand until they are needed in spring.—ED.]

Recent Publications.

The Genera of Taxaceæ and Coniferæ. By Maxwell T. Masters. Reprinted from the *Journal of the Linnæan Society of London.*

Dr. Masters has issued, in pamphlet form, his paper on the "Genera of Taxaceæ and Coniferæ," read December 15th, 1892, before the Linnæan Society of London and published in the thirtieth volume of its journal. This paper, the author tell us, is "the outcome of a comparative examination of the morphological characters of all the genera of Taxaceæ and Coniferæ, so far as I have been able to accomplish it. In most cases living plants have been examined, and in all instances the available museum and herbarium specimens have been studied and the literature relating to them referred to. Constant reference has also been made to the schemes of arrangement proposed by the older writers, and in more recent times by Eichler, Van Tieghem and others. In the main, however, I have followed the lines laid down by Bentham in Bentham & Hooker's *Genera Plantarum.*"

Taxaceæ, an order first proposed by Lindley, but reduced by Bentham to tribal rank, is restored, the genera being distributed in two tribes, Salisburineæ, composed of Ginkgo, Cephalotaxus and Torreya, a perfectly natural group; and Taxineæ, divided into two sub-tribes, of which the Yew, Taxus, is considered the type of the first. With it are joined the Australian genera, Pherosphæra and Phyllocladus, and Dacrydium, a genus widely distributed through the Malay peninsula, Borneo, New Zealand, Tasmania, New Caledonia and Chili. Podocarpus is made the type of the second sub-tribe, and with it are placed Stachycarpus of New Zealand, by Endlicher considered a section of Podocarpus, and later by Van Tieghem a distant genus, the view here adopted by Dr. Masters. With Podocarpus, too, are grouped Microcachrys, "a Tasmanian shrub, with small decussate leaves, which pass gradually at the end of some of the branches into stamens." It is best distinguished from Podocarpus by the form of the pollen grains, the aggregated fruits and the woody axis of the flower-spikes. Here, too, is placed Saxegothæa of Chili.

The Coniferæ are divided into four tribes, Cupressineæ, Taxodineæ, Araucarineæ and Abietineæ. In Cupressineæ are grouped Juniperus, common in the boreal parts of both hemispheres and extending south to the Mediterranean basin, the islands of the Atlantic, the Himalayas and the West Indies; Tetraclinis, with a single species in Morocco, the Gum Sandrac tree; Callitris of Australasia; Actinostrobus of western Australia; Widdringtonia of southern Africa and Madagascar, distinguished from Callitris in habit and foliage, by its terete branchlets and opposite leaves; Fitzroya, evergreen trees of Chili and Patagonia, and of Tasmania; Cupressus, to which Dr. Masters refers the Japanese Thuyopsis and Chamæcyparis, including the Japanese Retinosporas. The two-ranked branchlets of Chamæcyparis, however, the fewer seeds, generally two under each scale, and the fact that the cones mature in one instead of in two years, would seem to make it possible to retain generic rank for this group, which would, on the whole, be a rather more convenient arrangement than to merge it with Cupressus; Thuya, with representatives in eastern and western North America, China and Japan, the Himalaya Mountains and the Orient; and Libocedrus, which has a remarkable distribution, the species being natives of China, the mountains of New Guinea, our Pacific states, the Chilian Andes and New Zealand.

In Taxodineæ are placed Sciadopitys, with a single endemic Japanese species; Anthrotaxis of Tasmania; Sequoia, with our two California species; Glyptostrobus of southern China, and not to be confounded with the plant usually found in gardens under that name, which is a monstrous form of the Taxodium of our southern states; Cryptomeria, with a single endemic species in Japan, and Taxodium, the Bald Cypress of the south, with possibly a second species in Mexico, unless the Mexican Cypress is considered a mere geographical form.

In Araucarineæ are placed Cunninghamia, with a solitary Chinese species for which there is an older name, Bellis of Salisbury, which Dr. Masters acknowledges should have precedence, but which, owing to the similarity with Bellis, he does not adopt; Agathis of Australia, New Zealand, some of the Pacific Islands, Brazil and Chili; and Araucaria of Australia, Brazil, Peru and the South Sea Islands.

In Abietineæ the genera are grouped in the following sequence: Tsuga and Picea in the sub-tribe Piceæ; Cedrus, Larix and Pseudolarix in the sub-tribe Lariceæ; Kettellaria, Abies, and Pseudotsuga in the sub-tribe Sapineæ, and Pinus in the sub-tribe Pineæ.

Dr. Masters is the most careful and experienced student of Conifers. His opportunities for studying these plants in herbaria and in European collections have been exceptionally great, and this paper, the result of years of patient investigation, is a most important contribution to our knowledge of one of the most interesting and valuable, but perplexing, groups of plants.

Notes.

Mr. T. Makino, 3 Yawoicho, Mukogaoka, Tōkyō, offers to furnish sets of correctly named Japanese plants, with localities, date of collection, etc., at twenty cents a specimen, exclusive of postage or express charges.

The new seedling Plum named Mary is spoken highly of by the Fruit Committee of the Ohio Horticultural Society. It is a medium-sized plum with yellow flesh, and the tree is an abundant bearer. Last year this fruit sold at wholesale in the Cleveland market for more than twice the price which any other plum commanded.

Professor Massey, in *The Mayflower*, speaks very highly of a variety of Torenia Fournieri known as Compacta. This plant blooms in the border with the greatest profusion, and seems careless of the weather, whether wet or dry. The flowers are a rich porcelain-blue, shading to dark velvety blue, or almost purple, and, altogether, he regards this as one of the best of blue-flowered bedding-plants.

The so-called pink Calla, which is probably a variety of Richardia Rehmanni, a species with lanceolate, instead of hastate, leaves, which was introduced into the Cambridge Botanical Gardens in 1888, and of which specimens have since been sent to Kew Gardens, has so far produced flowers which show scarcely any trace of the rose color which characterizes them in Natal. The *Gardeners' Chronicle* says that, although

this Richardia has not the attractions of the useful old R. Æthiopica, or the new yellow-spathed R. Elliottiana and R. Pentlandi, nevertheless the development of the vigorous plants now growing in England will be watched with interest, since they will be worth looking after by hybridizers, and are certain to find many admirers among those who take an interest in what is novel and unorthodox among garden-plants.

Mr. S. D. Willard, of Geneva, New York, stated at the late meeting of the Ohio Horticultural Society that the Harris is the earliest variety of Apricot grown in western New York, and it ripens fruit about the 15th of July. The tree is of dwarf habit; the fruit is large and of good flavor. Harris and Mont Gammet are good varieties for home use, and St. Ambrosia is good for market purposes. Some trees near Geneva have borne five or six bushels in a single season, which have sold for ten dollars a bushel. The market, however, is limited, although the canneries would probably use all the surplus. New York state apricots, when canned and sold on their merits in the Boston market, brought fifty per cent. more than the same fruit from California. The curculio on the Apricot is fought in the same way that it is on the Plum, but it can be conquered more easily. When Plums are grown near Apricots the curculio seems to give its principal attention to the Plums.

A late bulletin of the Hatch Experiment Station of Massachusetts gives a continuation of some experiments to test the influence of electricity on the growth of plants. A bed was prepared and equipped with an apparatus by which an electrical current could be controlled and measured—that is, a given amount could be applied to the soil for a given time. Professor Clarence D. Warner, who made the tests, concludes that some kinds of seeds will germinate more quickly, and certain plants will blossom sooner and ripen fruit earlier when they are subjected to these electrical influences. Plants standing near the electrode developed a larger growth of roots and foliage than those more distant, and vegetables experimented with were not injured by a current of thirty-nine amperes with a voltage of fifty-three, but rather were stimulated in growth. Even if the foregoing inferences are correct, it is admitted that, with our present knowledge, the use of electricity in growing vegetables cannot be considered practical or profitable.

After the leading article of this issue was ready for the press, a remarkable remonstrance against the abandonment of the uniform practice of this city in treating its parks as works of art was presented to the Park Board. This remonstrance is signed by the presidents and many of the executive officers of all the societies in this city which have to do in any way with art, the list including officers of the Municipal Art Association, the Society of American Artists, the National Academy of Design, the Architectural League, the American Institute of Architects, the Art Students' League, the Sculpture Society, the American Fine Arts Society and others. Apart from the interests which they represent, the signers of this protest are individually among the best-known and most highly respected citizens of New York, and the weight of their influence against this departure from the established policy of creating public parks under the direction of trained skill and cultivated taste, ought to induce the majority of the Park Board either to reconsider their plans or to give sufficient reason for their unprecedented action.

The practice of coloring flowers artificially is not unknown in this country. White Carnations, Chrysanthemums and other flowers are tinted by placing their stems in water which contains some dye. Bulbous plants are treated by cutting off the tips of the roots, slicing the bulbs in one or two places, and then allowing the plant to steep in the tincture until the flowers begin to color, when the bulbs are replaced in the pot, covered with some earth, and the flowers are allowed to finish coloring there. Of course, this practice is to be altogether condemned, except in the production of occasional curiosities. Still worse, however, is the artificial coloring of fruit, which, as we learn from the *Revue Horticole*, is practiced sometimes in France, where, we believe, this ingenious coloring of flowers first originated. It seems that when plums are too green they are coated with acetate of copper or sulphate of copper; that lemons when too pale are tinted up with citronine, the green spots being imitated with "diamond green," whatever that may be. Strawberries are colored also by sprinkling them with some chemical, and peaches are delicately tinted with a mixture applied with a brush through a zinc stencil-plate pierced with holes. In melons a tube is introduced through which atropeoline, with a little essence of melon, is put into the centre, and new varieties of apples and pears are contrived by using analine dyes. We hope that it will be a long time before our fruit-dealers become experts in these devices to make bad fruit salable.

The Experiment Station of California is sending out to the farmers and gardeners of that state many seeds and plants for testing. All who desire these seeds or plants make an application, and are required to contribute a small amount to ensure a personal interest in what they receive, and they assume an obligation to report the results of their experience. Among the plants now offered for distribution are some varieties of table Grapes from Persia, which have been praised by all travelers. The vines belong to the species Vitis vinifera, but the fruit has quite a distinctive character when compared with the varieties grown in the west of Europe. The varieties which have already fruited at the station ripen early, about with the Sweetwater, and as they have a much firmer flesh and tougher skin than that variety, they may prove very valuable for early shipping. The berries are long, oval in form, of large size and good quality. Ten varieties are named, some of which are bright red, others light yellow, others green and others black. More than forty species of Italian Wine Grapes, received through the kindness of Count G. di Rovasenda, of Turin, are also offered. The principal value of these Grapes for cultivation in California, where the climate is very similar to that of Italy, is the remarkably high acidity of the fruit, together with the large proportion of sugar. The fruit is astringent, and yields wines which are in large demand for home use and export on account of their good keeping qualities, deep color, agreeable acidity and vinous flavor. Their astringency is reduced with age, and they become delicate first-class wines. The trees in the nursery of the discontinued Board of Forest Commissioners are also offered to the people of the state for planting on public grounds surrounding state and county buildings, city and village parks and school-grounds. In the bulletin which announces these offerings for distribution the English Oak is said to have proved very satisfactory as a rapid-growing hard-wood and shade tree in the coast region of California, but as it is rather difficult to transplant, the station offers to send acorns to all those who desire to start trees where they are sure of a permanent place.

Lemons have been remarkably scarce in this city during the past two months; the few cargoes which arrived in December were quickly distributed here and in western cities, and New York dealers have at times been compelled to draw on Boston for supplies. In November, when the Sicily fruit is due here, there were no imports of lemons, against 120,000 boxes received the year before during that month. The lemon season was unusually backward, and the very low prices obtained last year, together with the alarm on account of cholera, discouraged shipments; importations have been further delayed by unfavorable voyages of the Mediterranean fruit steamers. On Monday of this week a consignment of 17,000 boxes of Messina, Palermo and Catania lemons was sold at auction at high prices. Well-known brands brought from $4.25 to $5.00 a box, while in January, 1893, "fancy" lemons sold at from $2.25 to $2.75, and those of fair quality realized but $1.75 a box. The sale began with high-grade Messina fruit, but so bare was the market that prices advanced as the sale progressed, and toward the close, Catanias, the lowest grade of lemons, sold for as much as the best Sicily fruit. These high prices were forced by large orders from the west, and in an hour and twenty minutes, lemons to the value of $70,000 were sold. An average supply is expected during this month, so that lower prices are likely to follow soon. Along with the lemons were sold 2,200 boxes of Sicily oranges, at $1.80 to $2.10 a box. This fruit, while inferior in flavor to that from Florida, is in demand for its superior keeping qualities, and is therefore preferred by small dealers. The same general conditions apply to foreign oranges as to lemons, and but 1,700 boxes came into this port during last month, whereas 72,000 boxes were received in December, 1892. The orange crop in Florida is larger than ever before, and 406,600 boxes of this fruit had been received in New York alone by local dealers at the close of December. Since 1884, when only 600,000 boxes of oranges were shipped from Florida, the trade has steadily increased, and it is estimated that shipments this year will reach 4,500,000 boxes. Prices for Florida oranges at this time range from $1.25 to $2.40 a box. Pineapples may be had throughout the entire year, and various grades are now in abundant supply. Choice fruit from Havana can be bought as low as twenty-five cents at retail. Selected Florida pineapples bring as much as seventy-five cents each, while a small supply from the Azores last week sold for a dollar to a dollar and a half apiece. These were considered equal to the best pineapples ever seen here, both in quality and appearance.